List of Claims:

Claim 1 (Currently Amended): An image processing system operable to perform

cross talk correction ~~to~~ in a first pass on a digital image ~~having~~ arranged in a plurality of

~~pixels~~ lines, the image processing system comprising:

an image sensor circuitry ~~that is~~ operable to read an image ~~to~~ and generate ~~a~~ the

digital image based on the image;

a processing circuitry communicatively coupled to the image sensor circuitry; and

a line buffer circuitry, communicatively coupled to the processing circuitry, the

line buffer circuitry comprising a plurality of line buffers;

wherein the processing circuitry performs cross talk correction on a first pixel

during the first pass to generate a first cross talk corrected pixel, wherein said first pixel is

contained within a first line comprising a first plurality of pixels ~~to generate a first cross~~

~~talk corrected pixel~~, the first line is received from a first line buffer ~~contained within~~ of

the plurality of line buffers ~~circuitry~~;

wherein, during the first pass, the processing circuitry stores the first cross talk

corrected pixel in the line buffer circuitry, retrieves the first cross talk corrected pixel

from the line buffer circuitry, and uses the first cross talk corrected pixel to perform cross

talk correction on a second pixel to generate a second cross talk corrected pixel, wherein

the second pixel is contained within a second line comprising a second plurality of pixels

~~to perform the cross talk correction on the first pixel~~, the second line is received from a second line buffer ~~contained within~~ of the plurality of line buffers ~~circuitry; and~~

~~the processing circuitry receives a third line comprising a third plurality of pixels~~

~~from the image sensor circuitry~~.

Claim 2 (Currently Amended): The image processing system of claim 1, wherein the processing circuitry stores the second cross talk corrected pixel in the line buffer circuitry, retrieves the second cross talk corrected pixel from the line buffer circuitry, and uses the first cross talk corrected pixel and the second cross talk corrected pixel to perform cross talk correction on a third pixel to generate a third cross talk corrected pixel, wherein the third pixel is contained within a third line comprising a third plurality of pixels, the third line is received from a third line buffer of the plurality of line buffers ~~performs cross talk correction on a third pixel contained within the third line comprising~~ ~~the third plurality of pixels after performing cross talk correction on the first pixel~~.

Claim 3 (Cancelled)

Claim 4 (Currently Amended): The image processing system of claim ~~1~~ 2, wherein the first pixel, the second pixel and ~~a~~ the third pixel ~~within the third plurality of~~ ~~pixels~~ are aligned along a predetermined trajectory ~~within the plurality of pixels of the~~ ~~digital image~~.

Claim 5 (Currently Amended): The image processing system of claim ~~1~~ 2, wherein the processing circuitry <u>stores the third cross talk corrected pixel in the line buffer circuitry, retrieves the third cross talk corrected pixel from the line buffer circuitry, and uses the first cross talk corrected pixel, the second cross talk corrected pixel and the third cross talk corrected pixel to perform cross talk correction on a fourth pixel to generate a fourth cross talk corrected pixel, wherein the fourth pixel is contained within a fourth line comprising a fourth plurality of pixels, the fourth line is received from a fourth line buffer of the plurality of line buffers</u> ~~performs multi-pass cross talk correction on a fourth pixel contained within a fourth line comprising a fourth plurality of pixels, the fourth line is received from a fourth line buffer contained within the line buffer circuitry~~.

Claim 6 (Currently Amended): The image processing system of claim 5, wherein the first pixel, the second pixel, ~~a~~ <u>the</u> third pixel ~~within the third plurality of pixels~~, and the fourth pixel are aligned along a predetermined trajectory ~~within the plurality of pixels of the digital image~~.

Claim 7-15 (Cancelled)

Claim 16 (Currently Amended): A method ~~to~~ of perform~~ing~~ cross talk correction

~~to~~ in a first pass on a digital image ~~having~~ arranged in a plurality of ~~pixels~~ lines, the

method comprising:

performing cross talk correction on a first pixel during the first pass to generate a

first cross talk corrected pixel, wherein said first pixel is contained within a first line of

the plurality of lines in a line buffer, the first line comprising a first plurality of pixels ~~to~~

~~generate a first cross talk corrected pixel~~;

~~receiving a second line comprising a second plurality of pixels while performing~~

~~the cross talk correction on the first pixel; and~~

storing the first cross talk corrected pixel in the line buffer during the first pass;

retrieving the first cross talk corrected pixel from the line buffer during the first

pass;

using the first cross talk corrected pixel to perform cross talk correction on a

second pixel during the first pass to generate a second cross talk corrected pixel, wherein

the second pixel is contained within ~~the~~ a second line of the plurality of line comprising

~~the~~ a second plurality of pixels ~~to perform the cross talk correction on the first pixel~~.

Claim 17 (Currently Amended): The method of claim 16, further comprising:

storing the second cross talk corrected pixel in the line buffer;

retrieving the second cross talk corrected pixel from the line buffer;

using <u>the first cross talk corrected pixel and the second cross talk corrected pixel to</u>

perform cross talk correction on a third pixel <u>to generate a third cross talk corrected pixel,</u>

<u>wherein the third pixel is</u> contained within <u>a</u> third line <u>of the plurality of line</u> comprising a

third plurality of pixels ~~using a third pixel contained within a third line comprising a third~~

~~plurality of pixels to perform the cross talk correction on the first pixel to generate the~~

~~first cross talk corrected pixel; and a subset of the second line and a subset of the third~~

~~line comprise a cross talk correction grid within the plurality of pixels.~~

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Claim 18 (Cancelled)

Claim 19 (Currently Amended): The method of claim ~~16~~ <u>17</u>, ~~further comprising~~

~~storing the first cross talk corrected pixel in a memory location~~ <u>wherein the first pixel, the</u>

<u>second pixel and the third pixel are aligned along a predetermined trajectory.</u>

Claim 20 (Currently Amended): The method of claim 16, wherein the first pixel

and the second pixel are aligned along a predetermined trajectory ~~within the plurality of~~

~~pixels of the digital image.~~